

AMENDMENTS

This listing of claims will replace all prior versions and listings of claim in the application.

1. – 26. (cancelled)

27. (original) A method for programming, comprising:
performing a coarse programming phase for a non-volatile storage element until said non-volatile storage element reaches a first condition; and
performing a fine programming phase for said non-volatile storage element by metering charge to said non-volatile storage element.

28. (original) A method according to claim 27, wherein:
said fine programming phase is commenced for said non-volatile storage element subsequent to said coarse programming phase being completed for said non-volatile storage element.

29. (original) A method according to claim 27, wherein said metering charge to said non-volatile storage element comprises:
charging a charge storage element;
applying a program signal to said non-volatile storage element; and
discharging said charge storage element through said non-volatile storage element.

30. (original) A method according to claim 29, wherein said metering charge to said non-volatile storage element comprises:
connecting a capacitor to a power supply and charging said capacitor;
disconnecting said power supply from said capacitor after charging said capacitor;
applying a program signal to said non-volatile storage element; and
discharging said charge storage element through said non-volatile storage element.

31. (original) A method according to claim 29, wherein said metering charge to said non-volatile storage element comprises:

pre-charging a bit line associated with said non-volatile storage element;
causing said bit lines to be in a floating state after said pre-charging;
applying a common program signal to said non-volatile storage element; and
discharging said charge storage element through said non-volatile storage element.

32. (original) A method according to claim 27, wherein said metering charge to said non-volatile storage element comprises:

switching capacitors in a charge metering system.

33. (original) A method according to claim 27, wherein said metering charge to said non-volatile storage element comprises:

switching power supplies in a charge metering system.

34. (original) A method according to claim 27, wherein said metering charge to said non-volatile storage element comprises:

switching a variable power supply in a charge metering system.

35. (original) A method according to claim 27, wherein:
said coarse programming mode does not include metering charge to said non-volatile storage element.

36. (original) A method according to claim 27, wherein:
said a non-volatile storage element is a multi-state flash memory device.

37. (original) A method according to claim 27, wherein said metering charge to said non-volatile storage element comprises:

charging a charge storage element;

applying a common program signal to said non-volatile storage element, said common program signal is applied to multiple non-volatile storage elements along a common word line; and

discharging said charge storage element through said non-volatile storage element.

38. (original) A method for programming, comprising:
performing a coarse programming process on a non-volatile storage element;
determining that said non-volatile storage element should switch to a fine programming process; and

performing said fine programming process in response to determining that said non-volatile storage element should switch to said fine programming process, said fine programming process comprises:

pre-charging a control line for said non-volatile storage element, and
discharging said control line via said non-volatile storage element in order to program said non-volatile storage element.

39. (original) A method according to claim 38, wherein:
said step of pre-charging a control line includes charging a capacitor.

40. (original) A method according to claim 38, wherein:
said step of pre-charging a control line includes connecting a charge storage device to a power supply, said charge storage device is connected to said non-volatile storage element; and
said step of discharging said control line includes disconnecting said power supply from said charge storage device.

41. (original) A method according to claim 38, wherein:
said control line is a bit line for multiple non-volatile storage elements.

42. (original) A method according to claim 38, wherein:
said control line is pre-charged using a variable power supply; and

said fine programming process comprises changing said variable power supply to provide a signal appropriate for said fine programming process.

43. (original) A method according to claim 38, wherein:

said control line is pre-charged during said coarse programming process using a first power supply;

said control line is pre-charged during said fine programming process using a second power supply; and

said fine programming process includes switching from said first power supply to said second power supply.

44. (original) A method according to claim 38, wherein:

said control line is pre-charged during said fine programming process using a first charge storage device;

said control line is pre-charged when not in said fine programming process using a second charge storage device; and

said fine programming process includes switching from said second charge storage device to said first charge storage device.

45. (original) A method according to claim 38, wherein:

said non-volatile storage element is a multi-state flash memory device.